

Abstract

5 An apparatus and method for enabling the transport of a higher line rate time-multiplexed data signals (e.g., Ethernet at 10Gb/s) at a lower line rate (e.g., SONET OC-192) and for regenerating the higher line rate time-multiplexed data signals at the receiving end. At a transmitter end, a data stream compression apparatus removes a predetermined portion of non-unique, invariant content of the higher line rate data stream thereby generating the lower line rate data stream which is transmitted over a communication link to the receiver end. At the receiver end, a data stream expansion apparatus adds back the missing predetermined portion of non-unique, invariant content to the lower line rate data stream thereby regenerating the higher line rate data stream. A data compression multiplexer apparatus is formed by combining a plurality of the data stream compression apparatuses with a data multiplexer. A data expansion demultiplexer apparatus is formed by combining a data demultiplexer with a plurality of the data stream expansion apparatuses.